

11 β -HSD1 (H-100): sc-20175

BACKGROUND

Glucocorticoid hormone action in target tissues is modulated by 11 β -hydroxysteroid dehydrogenase (11 β -HSD), which catalyzes the interconversion of hormonally active C11-hydroxylated corticosteroids (cortisol, corticosterone) and their inactive C11-keto metabolites (cortisone, 11-dehydrocorticosterone). At least two isoforms of 11 β -HSD exist: a low-affinity NADP-dependent dehydrogenase/oxoreductase (11 β -HSD1) and a high-affinity NAD-dependent dehydrogenase (11 β -HSD2). The glycosylated 11 β -HSD1 protein activates cortisol from cortisone, which is widely expressed in mammals, and is most highly expressed in the liver. 11 β -HSD2 inactivates cortisol to cortisone and is expressed in placenta, aldosterone target tissues (kidney, parotid, colon and skin) and pancreas. 11 β -HSD1 may play a role in glucose homeostasis and pathogenesis of a number of disorders including Insulin resistance and obesity. 11 β -HSD2 associates with differentiation or maturation in human colonic epithelia and may serve as a marker in development and disease. In addition, 11 β -HSD2 plays a crucial role in modulating mineralocorticoid and glucocorticoid receptor occupancy by glucocorticoids.

REFERENCES

1. Tannin, G.M., et al. 1991. The human gene for 11 β -hydroxysteroid dehydrogenase. Structure, tissue distribution, and chromosomal localization. *J. Biol. Chem.* 266: 16653-16658.
2. Albiston, A.L., et al. 1994. Cloning and tissue distribution of the human 11 β -hydroxysteroid dehydrogenase type 2 enzyme. *Mol. Cell. Endocrinol.* 105: 11-17.
3. Brown, R.W., et al. 1996. Cloning and production of antisera to human placental 11 β -hydroxysteroid dehydrogenase type 2. *Biochem. J.* 313: 1007-1017.
4. Takahashi, K., et al. 1998. 11 β -hydroxysteroid dehydrogenase type II in human colon: a new marker of fetal development and differentiation in neoplasms. *Anticancer Res.* 18: 3381-3388.

CHROMOSOMAL LOCATION

Genetic locus: HSD11B1 (human) mapping to 1q32.2; Hsd11b1 (mouse) mapping to 1 H6.

SOURCE

11 β -HSD1 (H-100) is a rabbit polyclonal antibody raised against amino acids 65-164 mapping to an internal region of 11 β -HSD1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

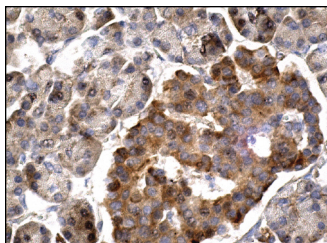
11 β -HSD1 (H-100) is recommended for detection of 11 β -hydroxysteroid dehydrogenase type 1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

11 β -HSD1 (H-100) is also recommended for detection of 11 β -hydroxysteroid dehydrogenase type 1 in additional species, including equine and canine.

Suitable for use as control antibody for 11 β -HSD1 siRNA (h): sc-41377, 11 β -HSD1 siRNA (m): sc-41378, 11 β -HSD1 shRNA Plasmid (h): sc-41377-SH, 11 β -HSD1 shRNA Plasmid (m): sc-41378-SH, 11 β -HSD1 shRNA (h) Lentiviral Particles: sc-41377-V and 11 β -HSD1 shRNA (m) Lentiviral Particles: sc-41378-V.

Molecular Weight of 11 β -HSD1: 34 kDa.

DATA



11 β -HSD1 (H-100): sc-20175. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human pancreas tissue showing cytoplasmic staining of islets of Langerhans.

SELECT PRODUCT CITATIONS

1. Schmidt, M., et al. 2005. Reduced capacity for the reactivation of glucocorticoids in rheumatoid arthritis synovial cells: possible role of the sympathetic nervous system? *Arthritis Rheum.* 52: 1711-1720.
2. Patil, S., et al. 2005. Palmitic and stearic fatty acids induce Alzheimer-like hyperphosphorylation of tau in primary rat cortical neurons. *Neurosci. Lett.* 384: 288-293.
3. Honda, Y., et al. 2008. Leydig cells from neonatal pig testis abundantly express 11 β -hydroxysteroid dehydrogenase (11 β -HSD) type 2 and effectively inactivate cortisol to cortisone. *J. Steroid Biochem. Mol. Biol.* 108: 91-101.
4. Eguchi, R., et al. 2011. Fish oil consumption prevents glucose intolerance and hypercorticotestosterone in footshock-stressed rats. *Lipids Health Dis.* 10: 71.
5. Cirillo, N., et al. 2012. Characterization of a novel oral glucocorticoid system and its possible role in disease. *J. Dent. Res.* 91: 97-103.